

ACKNOWLEDGEMENTS

Sincere appreciation is extended to Dr. Norman T. Davis of the University of Connecticut for the preparation of illustrations used in the present paper and to Dr. Rene Malaise of the Stockholm Rijksmuseum and Dr. A. J. Hesse of the South African Museum for the loan of valuable material in their respective institutions.

**A NEW PRIMITIVE PTILOMERA FROM THE
HIMALAYAS AND OTHER NOTES
(GERRIDAE, HEMIPTERA)**

By HERBERT B. HUNGERFORD and RYUICHI MATSUDA*

In 1843 Amyot and Serville in their "Histoire Naturelle des Insectes, Hémiptères", p. 413, described the genus *Ptilomera* for "*Gerris laticauda* Hardw. (Trans. Linn. Soc. 16: 131)" and gave as localities "Java, Du Nepaul, suivant Hardwich". They made several mistakes. First, Major General Hardwicke described *Gerris laticaudata* (not *G. laticauda*) from Nepal and figured on Plate VI, p. 136, a winged adult and an apterous male that he labeled as larva. His types that remain in the British Museum are two males (one apterous and one macropterous). They were studied by Dr. Lundblad (1933). Amyot and Serville on Plate VIII, fig. 3, gave a colored figure of an adult apterous male, which they labeled "*Ptilomera laticauda* Hardw.". Yet they say in their description of the genus "Nous connaissons ce genre que a l'état de larve". Fortunately their figure gives the general facies of the male *Ptilomera*, but if it comes from Java we believe it was misidentified.

From Dr. Lundblad's drawings of the male type of *Ptilomera laticaudata* Hardwicke (Zur Kenntnis der aquatilen und semi-aquatilen Hemipteren von Sumatra, Java und Bali, Archiv für Hydrobiologie, Suppl. Bd. 12, Tropische Binnengewässer IV, p. 412, 1933) we are inclined to believe that the species is confined to Nepal and eastward in the Himalaya mountains.

We have found in the Torre-Bueno collection purchased by the University of Kansas some years ago four specimens bearing the

* Contribution No. 1,001 from the Department of Entomology, University of Kansas. This report is a by-product of a project conducted with the aid of a grant from the National Science Foundation.

label "Singla Darjiling, E. Himalayas, June 13, 1,500 ft. Ld. Carmichael". One female, unlike the other three, may possibly be the female of *Ptilomera laticaudata* Hardwicke, and we are figuring and describing it because it is unlike the female of any other species known to us and comes from nearer Nepal than any other we have seen. This identification cannot be certain until both sexes are taken from the same place.

Ptilomera laticaudata (Harwicke) ?
(Pl. I, Pl. II, G, H)

Size: Apterous female 14 mm. long (Hardwicke gives length of the male as 11 lines which would be about 23 mm., and that is the length of his drawing of the winged form. The drawing of his apterous male is 19 mm. long). Width across acetabula is 3.78 mm.

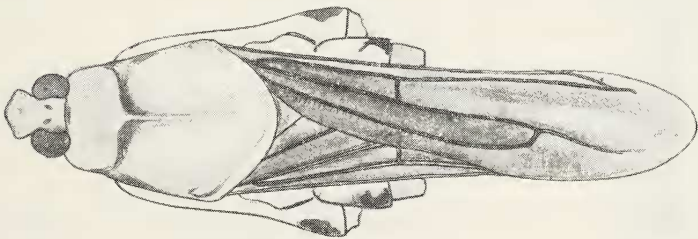
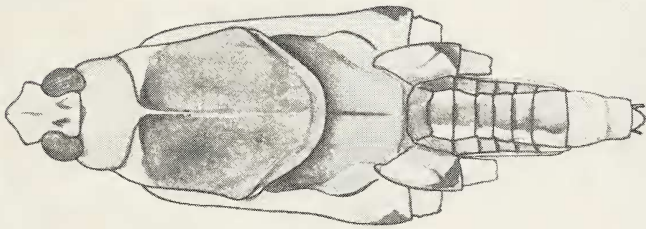
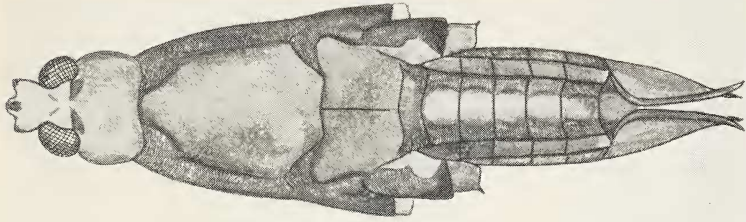
Color: Head and thorax rather reddish brown above, shining. Clypeus and four small spots between eyes dark. Pronotum with two transverse black spots on front margin. Mesonotum with anterolateral black areas and lateral black line covered with silvery pile, as is also metanotum. Abdominal tergites black, covered with silvery pile except a large round median testaceous spot on each segment. Venter pale testaceous, covered with a short silvery pile. Antennae brown. Front femora testaceous above, with two longitudinal brown lines; tibiae with a longitudinal brown line on outside. Middle and hind femora reddish brown; tibiae and tarsi darker.

Structural characteristics: Antennal formula : 1st : 2nd : 3rd : 4th :: 260 : 56 : 80 : ?. Female has prominent connexival spines that curve abruptly inward and then dorsocaudally and

TABLE I. The relative lengths of leg segments.

Front leg	Femur	Tibia	1st tarsal	2nd tarsal	Total tarsal length
Front leg	285	250	134	66	200
Middle leg	750	470	200	21	221
Hing leg	860	?	?	?	?

slightly surpass tip of upper lateral lobe of seventh abdominal segment; lower lateral lobe small but hides, in lateral view, depressed base of ventral median prolongation of seventh sternite, which in turn bends upward covering eighth segment. The modification of the seventh abdominal segment as described above is typical of



Top: *Ptilomera (Ptilomera) laticaudata?*, wingless female.
Middle: *Ptilomera (Proptilomera) himalayensis*, dealated male.
Bottom: *Ptilomera (Proptilomera) himalayensis*, winged female.

Ptilomera. The general facies, the shape of the antennae, the beak and eyes, the presence of a tooth or stout spine on the laterocaudal margin of the metacoxa as seen in the accompanying figures are all characteristic of all the previously described species of the genus *Ptilomera*.

Taken with the above by Lord Carmichael are three macrop-terous individuals, one of which is deälated. These specimens also possess the general facies, typical wing venation, typical shape of antennae, beak and legs of *Ptilomera*, but they lack the tooth or spine on the metacoxa and the genital segments of both sexes are simpler than in any other species of *Ptilomera* we have seen. The absence of the spine on the metacoxa would keep this species from running out to *Ptilomera* in Lundblad's key to the genera of Ptilomerinae. (Arkiv För Zoologi, Bd. 27A, N: O 14, p. 26, 1934). Of the nine genera assigned to this subfamily Ptilomerinae *Esakobates* Lundblad appears to be the most closely related to *Ptilomera* Amyot et Serville. We believe that our new species should be assigned to *Ptilomera*, but separated from other species by a different subgeneric name.

***Ptilomera* (*Proptilomera*) *himalayensis*, subgen. et sp. nov.**
(Pl. I, Pl. II, A-F)

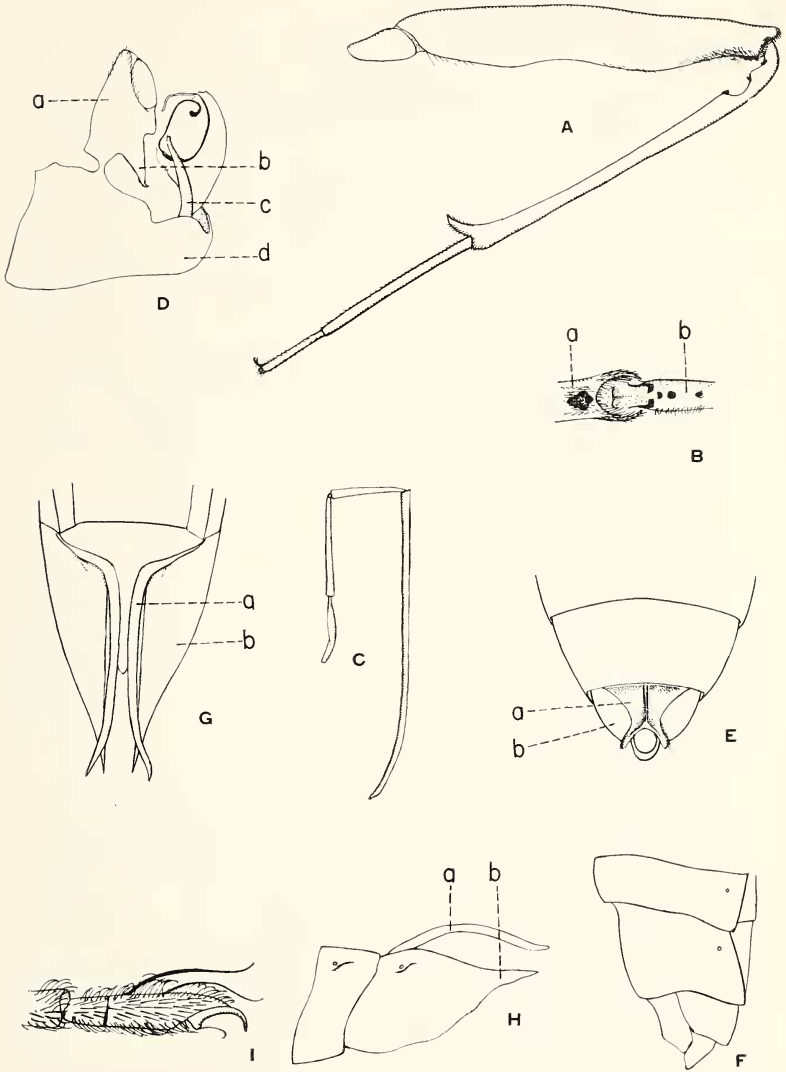
Size: Deälated male 12.3 mm. long; 3.36 mm. across humeri; 3.86 mm. across mesoacetabula. Macropterous male 14.4 mm. long, including wings; 2.8 mm. across humeri; 3.36 mm. across mesoacetabula. Macropterous female 14.44 mm. long, including wings; 2.94 mm. across humeri; 3.65 mm. across mesoacetabula.

Explanation of Plate II

Ptilomera (*Proptilomera*) *himalayensis* Hungerford and Mat-suda. A. Male front leg, outside view. B. Distal part of male front femur (a) and basal part of tibia (b), ventral view. C. Male antenna. D. Male genital segments, lateral view: a—suranal plate, b—lateral projection of the suranal plate, c—paramere, d—pygophore. E. Female apical abdominal segments, ventral view: a—prolongation of seventh sternite, b—lobe of eighth segment. F. Female apical abdominal segments, lateral view.

Ptilomera (*Ptilomera*) *laticaudata* Hardwicke? G. Female apical abdominal segments, dorsal view. H. Same, lateral view: a—connexival spine, b—upper lateral lobe.

Ptilomera (*Ptilomera*) species from South India. I. Hind tarsus as seen under compound microscope.



The wings surpass abdomen by 3.3 mm. in male and by 2.5 mm. in female.

Color: Reddish brown to testaceous above, wings brown. Head with two or more indefinite embrowned spots. Prothorax with a black spot on anterior median margin; a transverse band on anterior margin of posterior lobe broken in the middle by a low testaceous carina; sides of anterior lobe with a longitudinal black band not reaching to eyes and a large spot on proacetabula. Mesothorax with a lateral black band broader in front, and reaching back onto metaacetabula; mesoacetabula with a black spot. Venter pale testaceous, covered with short silvery pile. Abdominal tergites of deãlated male with black bands, covered with silvery pile across bases of first four segments. Antennae brown. Legs testaceous to reddish brown; anterior femora with two longitudinal reddish brown bands; middle and hind femora pale testaceous at tips.

Structural characteristics: Antennal formulae of male : 1st : 2nd : 3rd : 4th :: 265 : 62 : 95 : 55. Last segment somewhat curved and flattened. Beak barely touching mesosternum.

TABLE 2. The relative lengths of leg segments in the holotype male.

	Femur	Tibia	1st tarsal	2nd tarsal	Total tarsal length
Front leg	300	260	120	60	180
Middle leg	820	500	308	34	342
Hind leg	990	?	?	?	?

In the hind leg of the deãlated paratype male, which is larger than the holotype, the femur is 1180, tibia 683, and the tarsus 17. It is impossible to see the tarsal segmentation without clearing and examining under compound microscope; the tarsal segmentation in one species of *Ptilomera* from South India is shown in Plate II, Fig. A. Front femur of male is rather stout and has a characteristic shape as shown in Plate II, Figs. A and B; female front femur is normal in shape and provided with a small black protuberance ventrally near distal end; this protuberance is larger in male. Tibia of front leg also has three small protuberances on the inner base; these protuberances are smaller in female than in male. Male middle femur with densely ciliated ventral margin confined to distal two fifth; basal three fifth bare. Dorsal surfaces of both middle and hind femora with many shiny stout black spicules. Metacoxal

spine represented by a short blunt black protuberance. Male suranal plate rather small; lateral projection slender, inconspicuous and curved caudally at tip. Pygophore short and simple, broadly rounded caudally. Paramere slender, distal end curved dorsally as shown in Plate II, Fig. D. Female terminal abdominal segments are as shown in Plate II, Figs. E and F. Prolongation of seventh sternite narrow, bifurcate at tip and with a median longitudinal carina. It exposes laterally the eighth segment which in most species of *Ptilomera* is hidden beneath the broad and reflexed caudal prolongation of seventh segment.

Comparative notes: The lack of the metacoxal spine and of the connexival spine in the female separates this subgenus from *Ptilomera s. str.*

Location of types: The holotype macropterous male, allotype macropterous female and the deälated male paratype bear the label "Singla Darjiling, E. Himalayas, June 13 1.500 ft. Ld. Carmichael". These are in the Francis Huntington Snow Collection, University of Kansas.

Predatism in a Parasitized Caterpillar: In late June, 1941, a noctuid larva of unknown species was found in Amherst crawling over the cocoon of an eastern tent caterpillar. A day later it was noted that the entire cocoon, as well as the pupa therein, had been devoured by the larva. Another cocoon was offered the still active caterpillar, and it too was quickly consumed. But all thoughts of rearing this remarkable predatory larva ended abruptly when, a day or two later, a plump tachinid larva, of undetermined species, emerged from it, and the one-man tent caterpillar control program came to an end. Now, cannibalism among lepidopterous larvae is not unknown, but in this case was the predatism on the part of a presumably plant-feeding caterpillar a result of its parasitism, a compelling drive to devour anything and everything in a fruitless attempt to satisfy those very literally "gnawing" pains of a terrible hunger? One's sympathies are surely with the caterpillar.—MARION E. SMITH, Amherst, Mass.